INTERVAL PARTITIONS OF THE VERTEX SET OF A GRAPH

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It is known that the Boolean lattice can be partitioned into Dawson intervals which in a matroid are expressed via internal and external activities of the bases as defined by Tutte (Dawson, 1981). Since the edge set of a graph has a matroid structure we can apply this construction to the graphs. This means that each spanning subgraph of a connected graph can be constructed from edges of exactly one spanning spanning tree by deleting a unique subset of internally active edges and adding a unique subset of externally active edges (Trinks, 2013). A similar construction for the vertex set of a graph is faced with additional challenges since it does not have a matroid structure. In this talk, we will discuss the interval partitions of the Boolean lattice of the vertex set of a graph using the adapted version of the internal and external activities in the context of vertices.

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